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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/976,025	10/15/2001	Takashi Oki	SPO-0200	1564

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EXAMINER

FAULK, DEVONA E

ART UNIT	PAPER NUMBER
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2644

DATE MAILED: 12/24/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/976,025

Applicant(s)

OKI, TAKASHI

Examiner

Devona E. Faulk

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10/15/2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 October 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☒ Certified copies of the priority documents have been received in Application No. 09/976,025.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Claim Objections

1. Claim 2, on lines 3 and 5, recites "output form". It is interpreted that it should read "output from".

Claim Rejections - 35 USC § 112

2. Claim 6 recites the limitation "third sound output stage" in line 5. There is insufficient antecedent basis for this limitation in the claim. It is interpreted that it should read, "second sound output stage".

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claims 1-6** are rejected under 35 U.S.C. 103(a) as being unpatentable over Short et al. (U.S. Patent 4,739,514).

Regarding **claim 1**, Short discloses an automatic dynamic circuit comprising a high pass filter (52L, figure 7) which reads on "a high pass filter to which one of the two inputs sound signals is fed and which permits only a frequency component higher than the predetermined frequency to pass through so as to output a resulting signal as a first sound output signal"; a low pass filter (46) and its corresponding amplifier (47) which read on "bass booster". (column 4,

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lines 43-67). Short further teaches of an adder (14L) (Figure 3, column 3, line 23-25) between the high pass filter 51L and its corresponding power amplifier 52L. Although, Short does not teach of a switch placed between the adder and the output of the bass booster, it would have been obvious to do so in order to give the user a choice between speakers, or choice between maintaining a desired frequency to be output to the speaker(s). Incorporating a switch and the adder (14L) into Figure 7, would then read on “a bass booster to which the input sound signal output is fed and which amplifies only a frequency component lower than a predetermined frequency and attenuates another frequency component so as to output a resulting signal”, “a switch to which the signal output from the bass booster is fed at one end and which, when turned on, outputs the signal at another end” and “an adder to which the signal output from the high pass filter is fed and to which the signal output from the switch is fed, the adder adding together those two signals and outputting a resulting signal”. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Short's circuit as stated above for the benefit of having a stereo system that would permit the switching of speakers.

Claim 2 claims the deep bass sound booster device of claim 1, wherein the switch is turned on when the first and second signals are added together and fed out of the deep bass sound booster device by way of the first output terminal, and the switch is turned off when the first and second sound output signals are separately fed out of the deep bass sound booster device by way of the first and second output terminals respectively. As stated above apropos of claim 1, Short meets all elements of that claim. Therefore, Short meets all elements of claim 2 with the exception being that the switch is turned on when the signal output from the high pass filter and the signal output from the bass booster are added together and fed out of the deep bass sound

booster device, and the switch is turned off when the signal output from the high pass filter and the signal output from the bass booster are separately fed out of the deep bass sound booster device. . It is obvious that the would have to be turned on in order for the two signals to be added and that it would have to be off in order for the signals to be fed out separately. Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Short's apparatus by incorporating a benefit of enabling the equalization of loudspeakers to be automatically switched.

Regarding **claim 3**, Short discloses an automatic dynamic equalization circuit (Figure 7) comprising a first adder (17) that combines the left and right stereo signals (column 4, lines 47-50) which reads on "a first adder to which two input sound signals are fed and which adds those two signals together and outputs a resulting signal"; a high pass filter 51L that receives the signal from the left channel input, which reads on "a high pass filter to which one of the two inputs sound signals is fed and which permits only a frequency component higher than the predetermined frequency to pass through so as to output a resulting signal as a first sound output signal". The low pass filter (46) and its corresponding amplifier (47) read on "bass booster". (column 4, lines 43-67) Short further teaches of adder (17) feeding directly into a filter (Figure 3) and a second adder (14L, Figure 3; column 3, lines 16-25) that combines the signal from the dynamic equalization filter (16) with the left stereo signal. As such, it is obvious that one could modify Figure 7 so that the adder (17) would feed directly to the low-pass filter (46), and to incorporate a second adder between the high pass filter 51L and its corresponding power amplifier 52L. Although, Short does not teach of a switch placed between the adder and the output of the bass booster, it would have been obvious to do so in order to give the user a choice

between speakers, or choice between maintaining a desired frequency to be output to the speaker(s). Furthermore, Short does not specifically speak to two processing blocks but there is obvious processing being done on both the right and left stereo signal and it is obvious to put the processing relating to the left channel signal into one block and the right into another. So incorporating a switch, and adder (14L) would read on “a bass booster to which the signal output from the first adder is fed and which amplifies only a frequency component lower than a predetermined frequency and attenuates another frequency component so as to output a resulting signal as a second sound output signal”, “a second output terminal by way of which the signal output from the bass booster is fed out of the deep bass sound booster device”, “a switch to which the signal output from the bass booster is fed at one end and which, when turned on, outputs the signal at another end” and “a second adder to which the signal output from the high pass filter is fed and to which the signal output from the switch is fed, the second adder adding together those two signals and outputting a resulting signal” and “a first output terminal by way of which the signal from the second adder is fed out of the deep bass sound booster device”. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Short’s apparatus as stated above for the benefit of having a device that could permit the switching of speakers.

Claim 4 claims the deep bass sound booster device of claim 3, wherein the switch is turned on when the first and second signals are added together and fed out of the deep bass sound booster device by way of the first output terminal, and the switch is turned off when the first and second sound output signals are separately fed out of the deep bass sound booster device by way of the first and second output terminals respectively. As stated above apropos of claim 3, Short

meets all elements of that claim. Therefore, Short meets all elements of claim 4 with the exception being that the switch is turned on when the first and second signals are added together and fed out of the deep bass sound booster device by way of the first output terminal, and the switch is turned off when the first and second sound output signals are separately fed out of the deep bass sound booster device by way of the first and second output terminals respectively. It is obvious that the switch would have to be turned on in order for the two signals to be added and that it would have to be off in order for the signals to be fed out separately. Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to use Short's apparatus for the benefit of enabling the equalization of loudspeakers to be automatically switched.

Regarding **claim 5**, Short discloses an automatic dynamic equalization circuit (Figure 7) comprising high pass filters (51L and 51R) that receives the signal from the left channel input and the right channel input respectively, which reads on "a high pass filter to which one of the two inputs sound signals is fed and which permits only a frequency component higher than the predetermined frequency to pass through so as to output a resulting signal as a first sound output signal". The low pass filter (46) and its corresponding amplifier (47) read on "bass booster". (column 4, lines 43-67) Short further teaches of adder (17) feeding directly into a filter (Figure 3) and a second adder and third adder (14L and 14R, Figure 3; column 3, lines 16-25) that combines the signal from the dynamic equalization filter (16) with the left stereo signal and the right stereo signal respectively. As such, it is obvious that one could modify Figure 7 so that the adder (17) would feed directly to the low-pass filter (46), and to incorporate a second adder between the high pass filter 51L and its corresponding power amplifier 52L and a third adder

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between high pass filter (51R) and its corresponding power amplifier (52R). Although, Short does not teaches of a switch placed between the adder and the output of the bass booster, it would have been obvious to do so in order to give the user a choice between speakers, or choice between maintaining a desired frequency to be output to the speaker(s). Furthermore, Short does not specifically speak to two processing blocks but there is obvious processing being done on both the right and left stereo signal and it is obvious to put the processing relating to the left channel signal into one block and the right into another. Incorporating a switch and adders (14L and 14R) into Figure 7, would read on “a bass booster to which the signal output from the first adder is fed and which amplifies only a frequency component lower than a predetermined frequency and attenuates another frequency component so as to output a resulting signal as a second sound output signal”, “a switch to which the signal output from the bass booster is fed at one end and which, when turned on, outputs the signal at another end” and “a first adder to which the signal output from the high pass filter is fed and to which the signal output from the switch is fed, the first adder adding together those two signals and outputting a resulting signal”, “a first output terminal by way of which the signal from the first adder is fed out of the deep bass sound booster device”, “a second adder to which the two signals output respectively from the high pass filter of each of the two processing blocks are fed and which adds those two signals together and outputs a resulting signal”, and “a second output terminal by way of which the signal output from the bass booster is fed out of the deep bass sound booster device”. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Short’s apparatus as stated above for the benefit of having a device that could permit the switching of speakers.

Claim 6 claims the deep bass sound booster device of claim 5, wherein the switch is turned on when the first and second sound output signals are added together and fed out of the deep bass sound booster device by way of the first output terminal, and the switch is turned off when the first and second sound output signals are separately fed out of the deep bass sound booster device by way of the first and second output terminals". As stated above apropos of claim 5, Short meets all elements of that claim. Therefore, Short meets all elements of claim 2 with the exception being that the switch is turned on when the signal output from the first and second output signals are added together and fed out of the deep bass sound booster device, and the switch is turned off when the first and second sound output signals are separately fed out of the deep bass sound booster device as claimed. It is obvious that the switch would have to be turned on in order for the two signals to be added and that it would have to be off in order for the signals to be fed out separately. Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to use Short's apparatus for the benefit of enabling the equalization of loudspeakers to be automatically switched.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following patent are cited to further show the state of the art with respect bass booster devices:

U.S. Patent 6,285,767 to Klayman

U.S. Patent 5,581,626 to Palmer

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Devona E. Faulk whose telephone number is 703-305-4359. The examiner can normally be reached on 8 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bill Isen can be reached on 703-305-4386. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4700.

DF


XU MEI
PRIMARY EXAMINER